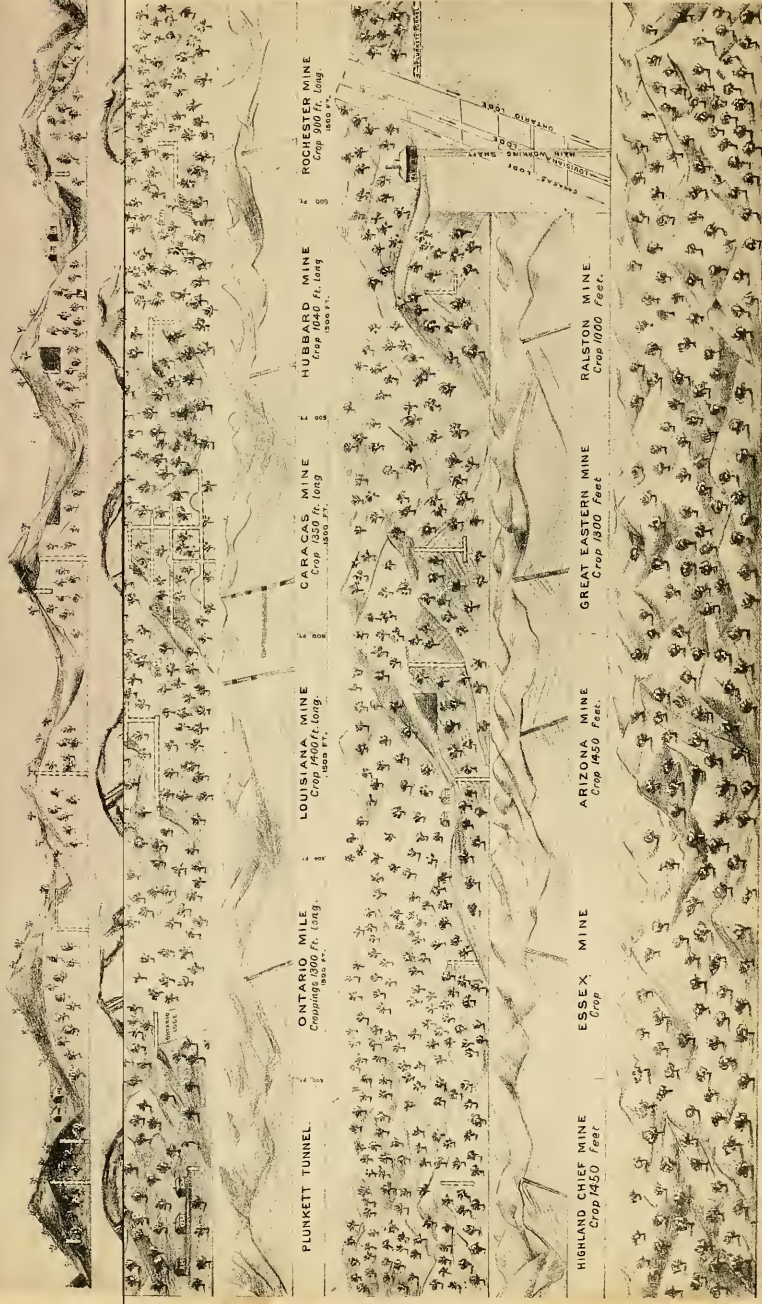


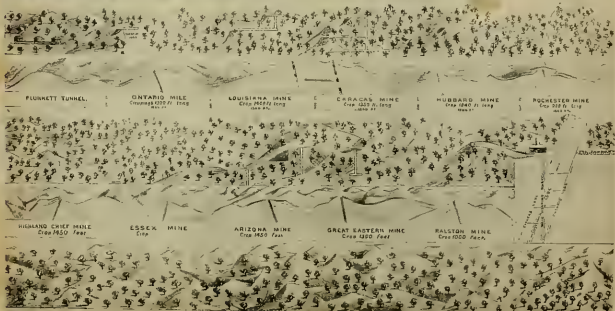
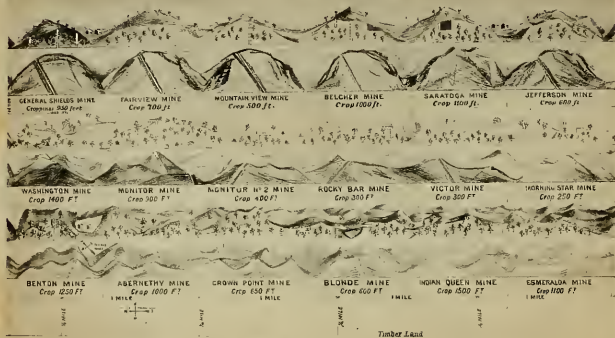
THE SHAWMUT CONSOLIDATED MINING AND MILLING COMPANY,

OF THE COUNTY OF ESMERALDA AND STATE OF NEVADA.



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PROSPECTUS

OF

The Shawmut Consolidated Mining and Milling Company

OF

ESMERALDA COUNTY, STATE OF NEVADA.

NOVEMBER 1, 1880.

OFFERED BY

THE MASSACHUSETTS MINING INVESTMENT COMPANY.

Incorporated under the laws of the State of New Jersey,
Oct. 21, 1880, with a full paid up unassessable
Capital Stock of \$500,000, divided into
100,000 Shares of \$5.00 each.

S. LAWRENCE FRENCH, Treas.,
53 DEVONSHIRE ST., BOSTON, MASS.

ROOM 6.

1880 nov. 29,
mail

The Shawmut Consolidated Mining and Milling Co.

100,000 Shares.

Par value, \$5.00.

Cash in Treasury, \$35,000.

President.

ALFRED A. NICKERSON.

Secretary and Treasurer.

S. LAWRENCE FRENCH.

Directors.

ALFRED A. NICKERSON,	S. LAWRENCE FRENCH,
FRANK N. THAYER,	JNO. A. GLIDDEN,
J. B. RUSSELL,	FREDERICK DABNEY,
JOHN HOWELL.	

Managing Director.

JOHN HOWELL, *Montezuma, Esmeralda Co., Nevada.*

Offices of the Company:

53 DEVONSHIRE STREET,

Boston, Mass.

MONTENZUMA,

Esmeralda Co., Nevada.

INTRODUCTORY.

THE Shawmut Consolidated Mining and Milling Company is organized and incorporated under the auspices of the Massachusetts Mining Investment Company, and has purchased the mining property and all the landed estates and privileges of the old Montezuma Mill and Mining Company of Esmeralda county, Nevada, after a very careful and thorough examination of the property had been made by Dr. Henry De Groot, one of the most skilled mining experts of the Pacific coast.

The following brief telegram, sent immediately after his examination, shows the high opinion which he gained of the property: —

SAN FRANCISCO, CAL., Aug. 18, 1880.

TO S. LAWRENCE FRENCH, —

Treasurer Massachusetts Mining Investment Company: —

Montezuma property extensive and valuable. About seven hundred tons are extracted; large bodies in sight in mines. Average assays as taken from mines, one hundred and thirty-nine dollars silver, forty per cent. lead. Wood and charcoal cheap and abundant. Property in good shape, and well managed. Railroad progressing rapidly towards district. Will send report in two days.

HENRY-DE GROOT.

The property which the Company owns is one of the most extensive in the State, and includes the following mines and mining locations, each of which includes from 1,000 to 1,500 linear feet, and upon all of which more or less work has been done: —

THE CARACCAS,	THE ARIZONA,	THE NEVADA,
THE ABERNATHY,	THE BULLION,	THE GREAT EASTERN,
THE BENTON,	THE HIGHLAND CHIEF,	THE LOUISIANA,
THE VICTOR,	THE BELCHER,	THE GENERAL SHIELDS,
THE MONITOR,	THE MONITOR NO. 2,	THE SARATOGA,
THE FAIRVIEW,	THE ROCKY BAR,	THE CROWN POINT,
THE WASHINGTON,	THE INDIAN QUEEN,	THE JEFFERSON,
THE ESSEX,	THE ROCHESTER,	THE BLONDE,
THE ESMERALDA,	THE RALSTON,	THE HUBBARD,
	THE MOUNTAIN VIEW.	

Besides the mines, the Company's landed estate includes a town site, upon which are located boarding and dwelling houses, miners' cabins, barns, stables, sheds, out-buildings, and storehouses. Eight quarter sections of valuable woodlands, thickly covered with a very fine growth of pine timber, sufficient to supply all the fuel necessary for running both the mill and smelting works, besides yielding a very fair article of lumber for building purposes. A valuable

water privilege, furnishing an inexhaustible supply of water, which is conducted through 1,200 feet of 2-inch iron pipe to the mill. Besides this supply of water, which is brought from a spring the above distance from the mill, the Company own two wells, which yield plenty of clear, cold water the year round, sufficient for all household purposes. Good wagon roads extend throughout the property, connecting all the mines with the mill and the smelting works, now in process of construction.

The Company are at present reducing their ores by means of a 10-stamp steam ore crushing-mill, capable of milling 12 tons of ore per 24 hours; but the recent change in the character of the ores, which are daily increasing in their percentage of lead, has made the erection of smelting works an imperative necessity.

These works have been contracted for, and their erection has already been commenced, and, when completed, the Company will have as good facilities for extracting and reducing silver-lead ores as any corporation of the kind in the country.

Besides the many improvements already mentioned, the Company will own a saw-mill run by the 70 horse-power steam engine of the ore mill, capable of turning out all the timber used in and about the mines, and all boards and other lumber necessary for building purposes; a large assay and business office; all the buildings already mentioned upon the town-site, including a blacksmith's shop, which is furnished with a full complement of tools necessary for the accomplishment of the work required of it.

The Company starts with \$35,000 in cash in the treasury, owning, free of all litigation, the above-named properties, mines, and improvements, besides many others, a fuller description of which may be found in the report of Dr. Henry De Groot, Mining Engineer, sent out by the Massachusetts Mining Investment Company, hereunto attached.

R E P O R T

ON THE MINES, WOODLANDS, REDUCTION WORKS, AND OTHER PROPERTIES
OF THE SHAWMUT CONSOLIDATED MINING AND MILLING COMPANY,

BY HENRY DE GROOT, MINING ENGINEER.

The mines and other landed estate of this Company are situated in the Montezuma Mining District, Esmeralda County, State of Nevada, at a point about 170 miles south-east of Carson City, capital of the State, and 80 miles in an easterly course from Aurora, county seat of Esmeralda County.

The Company's mines lie on the westerly slope of the Montezuma Mountains, a high range that here crosses the country in a northerly and southerly direction. These mountains are a southerly continuation of the Diamond Range, in which the Eureka District — containing the Eureka Consolidated and Richmond Mines — is situated. Some of the higher peaks in the Montezuma District reach an altitude of over 9,000 feet, the mines here having a mean elevation of about 4,500 feet above sea level.

Centrally considered, these mines are distant 45 miles east south-east from the terminus

of the Carson and Colorado Railroad, with which point they are connected by a good natural wagon road, passable at all seasons of the year. As these mines lie near the foot of the mountains they can be reached over easy grades, the main road leading to them being of such gentle ascent that heavily-laden teams can pass over it without difficulty. The above railroad, which will be completed early in the coming spring, connects through the Virginia and Truckee Railroad, with the great trans-continental roads, thereby establishing railroad communication between this section of the country and both the Atlantic and Pacific seaboard.

COUNTRY ROCK AND VEIN SYSTEM.

The geological formation in this neighborhood is composed wholly of alternating belts of lime-rock and shale or clay slate, having a generally north and south trend. Occurring in, and striking diagonally across, these belts are the ore-bearing veins, their course, with a few exceptions, being nearly S.S.W. They occupy regular well-defined fissures of great linear and apparently of great vertical extent. These lodes or veins are numerous and variable in size, ranging at the surface from a few inches to 6 or 8 feet in width; they incline to the S.E. at angles, varying from 40 to 85 degrees; they outcrop but little, and at long intervals, their tops being almost everywhere covered with several feet of schistose rock, which has here suffered extensive disintegration. The most of these lodes can, however, be traced for a long distance, sometimes as much as 2 miles or more, by reason of an occasional outcrop, and the persistence with which they hold to their regular course.

The ores in this group of mines comprise both the milling and the smelting varieties. The former, which hold to a depth varying from 70 to 460 feet, consist of a sulphuret of silver; while the latter which come in at these depths are composed of a very pure silver-bearing carbonate and sulphuret of lead. These ores, which are of good grade, as shown by the large quantities already milled, and the numerous assays made of them, as hereinafter cited, can be readily treated by the several methods to which they are adapted; the milling ores, yielding, after roasting in the Howell furnace, 92 per cent. of the precious metals they carry, while the smelting varieties, which as a general thing carry all the fluxes necessary for their perfect fusion, surrender even a higher percentage of their metals on being passed through the furnace. The gangue here is made up mainly of quartz and calcite, carrying a small percentage of the oxide of iron.

As the vein matter is apt to be separated from the country rock by a heavy clay selvage, the ore breaks out readily, but little blasting, and in some of the larger veins none at all, being required in its extraction. From the many milling and assaying tests mentioned, these ores are found to carry from \$50 to \$300 per ton in silver, and traces of gold, the smelting varieties yielding an average of about 40 per cent. of lead.

NUMBER AND EXTENT OF MINING LOCATIONS AND DEVELOPMENTS MADE.

The Company owns here 29 separate veins, or mineral locations, running from 1,000 to 1,500 feet each in linear extent. Upon more than one-half of these locations little or no

exploratory work has as yet been done. Concerning this class it need only be said that they are marked by all the external features of permanence and fertility that characterize the lodes already somewhat developed. In regard to the latter, some twelve or thirteen in number, it may be premised that their exploration has been effected mostly by means of shafts sunk or tunnels run in the vein matter, no other hoisting appliances than the hand windlass, — supplemented in a single instance by a horse-whim, — having yet been brought into use.

Owing to an entire absence of water in these mines, and the small amount of waste material to handle, steam hoisting works have not as yet become necessary, nor will there probably be any demand for them for a long time to come, as recourse to tunnelling for effecting both ore extraction and drainage will early be had here, the many deep ravines, that cut the lodes at nearly right angles, affording great facilities for cheap tunnel construction.

THE CARACCAS MINE.

This, one of the principal mines of the group, both as regards size and value and extent of development, lies near the upper and easterly margin of the mineral belt that here traverses the country. The lode at this point has been exploited by means of a series of tunnels, driven the one above the other in and along the vein-matter. These tunnels, which are numbered 1, 2, and 3, have reached a length of 126, 374, and 520 feet respectively. The vein here has been stoped out for an average length of 325 feet and a depth of a little over 300 feet, the ore extracted having yielded bullion to the value of about \$300,000.

The Caraccas ore thus far utilized has shown itself to be of a uniform good grade. Forty-four assays of battery-pulp, taken at random from the Company's books, show an average value of \$132.44 in silver to the ton, a result that my own assays of this ore tend to confirm.

A double-compartment vertical shaft is now being put down near the northerly end of the claim. It is substantially timbered, and has reached a depth of 150 feet. From its bottom a drift has been extended to the vein and thence along the same 130 feet, bringing its inner extremity within 150 feet of the rich ore chute where former stoping was carried on. When this chute shall be reached, some 170 feet of additional backs will be here established, after which ore extraction can be advantageously resumed, and, no doubt, be actively kept up for a considerable length of time.

Connected with this lode, and within the limits of the Company's claim, are several heavy and fertile spurs or branches. These were located as separate veins, but having since been traced up and found to run into the main lode, they have been treated as adjuncts of the latter, to which they will, unquestionably, contribute both enrichment and strength. The Caraccas ledge proper, so far as exploited, shows a width varying from 2 to 5½ feet, its principal branches ranging from 1 to 2 feet in thickness.

The hoisting at this mine is performed by means of a horse-whim erected over the main shaft. There have been put up here a blacksmith shop, boarding-house, stable, etc., rendering the outfit of the mine very complete.

The ore from the Caraccas and its several spurs has heretofore been reduced by crushing, roasting, and amalgamating, — a method that now, through the increase of lead, must be superseded by smelting.

THE ARIZONA MINE.

This mine comprises 1,000 linear feet on a powerful and well-formed vein, and has been prospected and worked by means of three inclined shafts put down between its walls, the one at the centre and the others near either end of the claim.

The most north-easterly of these shafts has been sunk to a depth of 110 feet, the central to a depth of 60 feet, and the other to a depth of 44 feet. From the bottom of the former, drifting has been carried 20 feet to the north-east and 15 feet in an opposite direction, uncovering a 3-foot stratum of ore that runs extremely high in silver and lead. A 12-foot cross-cut driven on this level has failed to reach the upper wall of the lode. Drifting carried 50 feet either way from the bottom of the 44-foot shaft shows a ledge 8 feet thick, nearly one-half of which is composed of excellent ore. 80 feet of drifting done on the vein at the bottom of the central shaft exhibited about the same ore-showing as above described.

The ore taken from these several excavations is said to have milled a little over \$100 per ton. From the waste dump at this mine 300 or 400 tons of ore could be selected that would probably yield \$40 or \$50 to the ton, possibly a good deal more.

20 mill pulp assays of this ore made by the Company show an average of 45 per cent. lead, \$150.90 silver to the ton. My own assays of this ore run higher.

Latterly these ores have become so charged with lead as to defeat their being milled with any closeness, this metal having at length come in to an extent that renders their further reduction by this process inexpedient, if not impracticable.

THE NEVADA,

though not a large ledge at the surface, carries a good percentage of high-grade ore, and shows a tendency to lateral expansion downward. The value of the ore appears also to increase with depth. Three shafts have been put down on the vein, one near the north-easterly extremity of the claim being 45 feet deep, another, 750 feet distant, 40 feet deep, while the third, still further on, has a depth of 35 feet. From these several shafts, and some limited drifting carried on from one or two of them, a total of 500 tons of ore has been extracted. This ore milled from \$70 to \$120 per ton, the average yield having been not far from \$95. Of the 80 tons of ore lying on the mine dump, two-thirds would probably pay at the rate of \$50 or \$60 per ton.

The trouble common to all the mines opened in the lead-bearing district has been encountered here. The ore now reached is, however, of excellent quality and exceedingly well suited for smelting, the mine itself being in good condition for large ore extraction and marked by many features of value.

THE BULLION MINE

has been exploited by a 65-foot shaft sunk on the lode, from which a considerable amount of drifting has been done. Some 600 or 700 tons of ore have been taken out here. The richer portions of this ore, which were sent to Austin for reduction, yielded several hundred dollars to the ton, the entire lot extracted having averaged about \$100 per ton. From the refuse lying at the mine, 25 or 30 tons of medium-grade ore might be selected.

The lode at this point, though somewhat shattered near the surface, gathers up at a depth of about 40 feet, below which, its structure is compact and shapely. At all points exposed, it carries a 3-foot stratum of clean high grade ore, the whole of it so friable that it can be readily broken down with the pick.

THE GREAT EASTERN MINE

lies on a strong well walled lode, having an average thickness of about $4\frac{1}{2}$ feet at the surface. This lode, at the point covered by the Company's claim, stands nearly vertical, and can be traced by a line of croppings for 1,000 or 1,200 feet, and by other easily recognized signs of its presence for a much greater distance. The principal work done on this mine consists of a shaft sunk between the walls to a depth of 30 feet. The ore here, some 200 tons of which have been taken out, carries, as shown by my assays, $39\frac{2}{10}$ per cent. lead, and \$45.56 silver per ton.

This mine will yield a large amount of ore, the most of which can be broken down with the utmost facility.

Lying near, but at a considerable elevation above, the Great Eastern, is

THE BENTON MINE.

This is a gold and silver bearing ore of high grade, and easily milled. Of the considerable quantity of ore raised here, about 25 tons of the cullings remain on the dump.

The lode, which is marked by heavy croppings, has an average thickness of $3\frac{1}{2}$ feet. It has been opened by an incline shaft to a depth of 80 feet, the ore developments made by this shaft being of a favorable kind.

THE HIGHLAND CHIEF.

This claim contains a small lode, not over 20 inches wide on top, and carrying 38 per cent. lead, and from 40 to 60 ounces silver per ton; it is a good smelting ore. Mine opened by two inclines, 18 and 20 feet deep each. The lode at the bottom of the shaft is somewhat larger than at the surface.

THE LOUISIANA MINE,

situated on Caraccas Hill, has been opened by two tunnels, one 65 and the other 200 feet long, and by a shaft sunk in the vein to a depth of 60 feet. The vein, which varies from 2 to 5 feet in thickness, and is composed largely of ore, has been stoped out above the tunnel levels. From the shaft no stoping or drifting has been done. This lode will be worked hereafter through the main shaft of the Caraccas Mine, which affords excellent facilities for the purpose.

Nine mill pulp assays of this ore, as I find them entered on the Company's books, show an average value of \$164.26 silver to the ton, a result that corresponds very nearly with my own tests made of this ore.

THE VICTOR,

also situated on Caraccas Hill, is a small vein, with no developments other than a 12-foot shaft and an open cut run in on the vein. Assays of the ore show \$30 to \$70 silver per ton, with small percentage of lead.

THE GENERAL SHIELDS,

situated one-half mile below the Nevada Mine, shows a strong lode, somewhat broken and irregular in its upper portions, but having a perfect foot-wall. Two shafts have been sunk on the vein, one to a depth of 40, and the other to 62 feet. A large lot of ore was extracted from this mine several years ago. That it must have been of pretty high grade is shown by the fact that it was nearly all shipped to Austin for sale or reduction, at an expense of about \$100 per ton. Though but little work has been done on the mine by present owners, it may be considered a property of no little value. Ore-extraction could at once be resumed here to advantage. Assays show \$170 per ton of ore.

THE SARATOGA MINE

carries a small but well-formed and compact vein, which, next to the Carracas, has produced more high-grade ore than any other mine in the district, the entire mass of ore extracted having milled about \$200 per ton. Company's pulp assays average \$210.63 per ton. The mine has been opened by three shafts, the deepest 97 feet, to which level stoping has been carried. A tunnel, now being advanced upon the lode, will open up the same to a depth of 65 feet below the old works. This tunnel, which is now in 346 feet, leaving 80 feet more to be driven, will, when completed, supersede hand-hoisting heretofore practised, thereby expediting ore-extraction and reducing its cost at the same time. When this tunnel is finished the mine will be in good condition for active operations.

THE BELCHER MINE.

The vein here, which is large, solid, and symmetrical, carries a fair quality of smelting ore, yielding \$65 per ton silver, and 38 per cent. of lead. A trouble with this ore is the considerable quantities of clay and other earthy impurities mixed with it, rendering careful assorting necessary.

This mine covers probably a section of the same vein on which the Arizona is situated. The only work done on the Belcher consists of an open cut, 70 feet long, run in on the lode, and an incline shaft carried to a depth of 86 feet. There is a good deal of ore in sight here.

THE MONITOR MINE

consists of a small, compact lode, with a high-grade smelting ore, five pulp assays on Company's books averaging \$146.76 silver per ton. Developments are confined to an incline shaft 110 feet deep, connected at its bottom with a tunnel 220 feet long, driven in and along the vein. Below the tunnel level scarcely any work has been done.

THE MONITOR No. 2

consists of a second location on the Monitor lode. Not having been opened up to any extent it can be said of this claim that it resembles, in external features, Monitor No. 1.

OTHER LOCATIONS.

Of the claims mentioned below it will suffice to remark as follows: —

THE FAIRVIEW is a small vein on which a 40-foot shaft has been put down, showing streaks of \$65 ore.

THE ROCKY BAR is simply an outcrop of a heavy galena ore running from \$32 to \$45 silver per ton. No work of any consequence done.

THE CROWN POINT not materially different from Rocky Bar.

THE WASHINGTON, large outcrop low-grade carbonate ore, assaying from \$9 to \$35 silver to the ton.

THE INDIAN QUEEN is in all probability nothing more than a spur of the Great Eastern, its course and the character of its ore denoting the same.

THE JEFFERSON seems to be a continuation of the Bullion lode. This established, the claim would possess prospective value.

THE ESSEX, ROCHESTER, MOUNTAIN VIEW, BLONDE, ESMERALDA, RALSTON, and HUBBARD CLAIMS, though all located on what are unmistakably mineral-bearing veins, some of them outcropping boldly and of apparent large proportions, can in no sense be called mines. Some of them may, and very likely will, develop into such; but for the present they are to be regarded as mere locations, and as such require here no further notice. Enough work has been done on them to render their tenure secure.

PROPERTIES APPURTENANT.

Annexed to these mines and constituting a very useful and important adjunct to the same are the following properties, franchises, and improvements, to wit: a 10-stamp steam ore crushing-mill, with roasting furnace, assaying department, and saw-mill attached; eight quarter sections of woodland, including town site, upon which latter has been erected numerous boarding and dwelling houses, miners' cabins, hay-sheds, stables, shops, etc.; well-constructed wagon roads leading into and through all parts of the mines; an extensive salt marsh lying convenient to the proposed smelting works; a valuable water franchise, furnishing an unintermitting supply of water, sufficient for every purpose, together with a variety of minor appendages and improvements, some of them quite costly, and all of more or less practical utility.

THE COMPANY'S MILL

is situated near the head of a mountain canyon that here opens into a capacious flat, affording ample room for all needed out-buildings, slag, and tailing dumps, wood and lumber yards, coal and ore bins, water-tanks, corrals, stables, etc. Besides being in close proximity to the principal mines, the mill can be easily reached by teams coming in from the woodlands, salt field, and railroad; in short, from every direction that freights require to be brought in. Having been substantially built and thoroughly equipped at the start, and carefully looked after since, this mill is well preserved and in good working order. Most of the running machinery is in fact nearly new, having been put in place within the past sixteen months. The boiler is strong and safe, the engine about as good as when built, and the running gear generally, the heavy india-rubber belting included, not much the worse for wear. The establishment, which may be considered as first-class, both as regards original construction and outfit, could be started up at a day's notice, all parts of it being in fit condition for immediate and efficient service. It has capacity to crush 12 tons of ore every 24 hours.

Into this mill a variety of mechanical devices have been introduced, through the use of which a considerable economy of labor has been effected. A "Blake Rock-Crusher" breaks the ore into suitable size for being passed under the stamps. A screw-conveyor carries the pulp from the battery forward and discharges it into a hopper, whence it is fed into an elevator, that in turn empties it into the roasting furnace. After being roasted this material is delivered into a receiver suspended from a revolving crane, that carries it around and deposits it on the pulp floor, where, after cooling, it is passed into the amalgamating pans; the entire operation of roasting and transferring the pulp from the batteries to these pans being accomplished with very little manual labor. For effecting amalgamation two of Stevenson's improved pans are employed, the pulp for final treatment being passed from these into two large muller-settlers.

Dry crushing being here practised, effectual means have been adopted for preventing the dust from escaping into the mill, where its presence, besides proving a great annoyance, would seriously impair the health of the workmen.

Suitable provision has also been made for so conducting away the furnace gases and fumes as to render them inoffensive and harmless.

For desulphurating and chlorodizing the ores here, one of Howell's medium-sized roasting furnaces has been provided and set up. This, though an expensive structure in the first instance (costing something over \$8,000), put in place, is by far the most effective furnace yet brought into extensive use, and as such promises soon to supersede every other invention of the kind extant. It constitutes a valuable addition to the works of the Company.

The assaying department is very complete, being furnished with everything necessary for the performing of the work pertaining to it on a large scale, and with the utmost exactness and dispatch.

A belt, attached to the main shaft, operates a portable saw-mill, which cuts all the boards and other lumber required on the premises, together with the lagging, and a portion of the square timbers, posts, etc., used in the mines.

The machinery here is propelled by a 70-horse power steam engine, which it is calculated will have capacity to drive also the blowers attached to the smelting furnace, which the Company contemplate erecting at an early day.

Connected with the mill is a blacksmith shop, furnished with a complete assortment of tools, and some stock. The mill itself is also supplied with a full complement of tools, which, not to particularize, may be said to include every implement and appliance necessary, or at all useful, in and about an establishment of this kind.

There is also kept on hand here much duplicate machinery, with considerable quantities of salt, iron, charcoal, wood, lumber, belting, powder, quicksilver, chemicals, etc. The stock of salt amounts to 140 tons, which cost \$14 per ton, delivered at the mill. There lie at the mill 250 cords of fire-wood, besides some 50 cords piled up in the woods. There are stored in the sheds fully 30,000 feet of lumber and lagging. There goes with the property a large quantity of mining tools and utensils, many of them wholly new; also several work horses, with lumber-wagons, harness, etc.

HOUSES, BARNs, AND OTHER OUT-BUILDINGS.

For the accommodation of workmen employed in and around the mill there have been erected on the grounds two capacious boarding and lodging houses, and a number of cabins; also a business office for the use of the Company, barns for the storage of hay and grain, stables for housing the work animals, and various other out-buildings, the whole being constructed from stone or sawed lumber.

THE WATER SUPPLY

is obtained from a spring situated in a canyon 1,200 feet from the mill, and at an elevation of some 400 feet above it. This spring, which belongs to the Company, is never-failing, and furnishes enough water for the use of the mill and all other purposes. Not to depend on mere surface water, this spring has been opened by means of a tunnel 200 feet long, which intercepts it at a depth of 60 feet below the surface, insuring a more steady as well as a more copious supply. This water is conducted through a 2-inch iron pipe into large tanks, whence it is distributed to points where required for use. This water is in itself a valuable property, it being pure and cold, and the flow ample for every requirement. To guard against any possible deficiency this source of water supply has been supplemented by two wells, the one sunk at the mill, and the other near the principal boarding-house, to the depth of 70 and 80 feet respectively. They both afford an abundance of water. The steam pump placed in the former is capable of throwing the water over the top of the mill, thereby proving a tolerably efficient safeguard against fire.

Among the minor, but not unimportant, improvements made by the Company are

THE SEVERAL WAGON ROADS

reaching from the mill into the woodlands and the mines, and through the construction of which the hauling out of timber, fuel, and ore, has been greatly facilitated. These roads, aggregating some 7 or 8 miles in length, run over easy grades, either directly or by short branches, to all the mines now opened. As additional mines come to be opened up, these roads will be extended until they traverse every part of the district.

FUEL AND LUMBER.

The eight quarter sections of land taken up by the Company are densely timbered with pine, or nut-pine, a wood admirably adapted for fuel, as well also for making charcoal. Though short and full of limbs many of the trees attain here an unusually large growth. From some of them a good-sized saw-log can be cut, which affords a very fair article of lumber. All the mining timbers used in the district, as well also as most of the lumber employed in the construction of the Company's mill and other buildings, were cut from the nut-pine growing in the neighborhood. Outside the several tracts of land owned by the Company the country for many miles around is covered with a like heavy growth of this timber, relieving the fuel problem here free from the exigencies that elsewhere throughout this section of the State so generally beset it. So great, in fact, are the wooded resources of this district, that they may be considered practicably inexhaustible. To these extensive forests the mill of the Company occupies a central and altogether accessible position.

THE COMPANY'S SALINES.

Salt, another article of prime necessity in the reduction of one class of these ores, has also been placed by nature within easy reach. To the north-west, 10 miles distant from the Company's mill, lies the Silver Peak salt marsh, at the lower end of which the Company have secured four 40-acre tracts, covering the most prolific portion of the saliferous basin that extends many miles to the south-west. All that is necessary in gathering the salt at this point, is the excavating of shallow holes in the ground, these usually being about 4 feet in depth and 10 or 15 feet in diameter. These holes or vats, as they are generally termed, become in the course of two or three weeks completely filled with the pure chloride of sodium, which after being shovelled out and exposed to the desiccating atmosphere for a few hours, is so thoroughly relieved of its moisture that it may be scooped up and carted away. Salt of the finest quality costs here only the labor of collecting it by the above simple and inexpensive process.

ORE STOCK ON HAND.

Lying at the dumps of the several mines, partially opened, are between 600 and 700 tons of ore, a portion of it high, but the most of it not above medium, grade and of the smelting variety. This ore, taken as a whole, carries from 30 to 40 per cent. of lead, and will probably yield \$60 in silver to the ton. Lying at the mill are 120 tons of third-class ore, worth \$36 per ton. Collected below the mill are some 800 tons of tailings, that will yield about \$16 per ton, and which are susceptible of treatment by either amalgamation or smelting.

A SMELTING FURNACE CALLED FOR.

From what has been said, it will be seen that the property under consideration is one of varied features and large extent. It is not merely a mine, nor a series of mines, but rather a mining estate, having within itself everything necessary to the prosecution of the business in an economical manner and on an extended scale.

The mineral and other natural resources of the Company are great. Their landed possessions cover an area of 1,440 acres, while their mining locations aggregate something like

43,000 linear feet of ore-bearing veins. For the purpose of utilizing these resources fully and cheaply, little more is now required than the erection of a smelting furnace — one at first, and more afterwards if necessary — for reducing their silver-lead ores. This provided, a protracted season of large and profitable bullion production may here be counted upon.

As already remarked, these ores have heretofore been treated by crushing, roasting, and amalgamation. Latterly, however, the percentage of lead they carry has been so increased as to render this method of treatment difficult and wasteful. The most of them have in fact become so heavily charged with this metal that the construction of a smelter has at last assumed the shape of a controlling necessity. To persist longer in milling these ores would involve a serious and inexcusable waste, inasmuch as it is one that can be easily avoided, and once incurred would be irreparable.

The most of the ore now being raised, and which will henceforth require to be handled here, is well adapted for reduction by smelting, being rich in lead, and carrying, as a general thing, all the fluxes necessary to a ready and perfect fusion. Should any of the ore be found deficient in this respect, there is any quantity of lime and iron right on the ground that can be obtained for the cost of quarrying; for the oxide of iron, like the carbonate of lime, exists here in great reefs running through the country, the former being often found in huge masses lying loose on the surface of the ground. Owing to the abundance of timber a superior article of charcoal can be made and delivered at the furnaces at a small cost; nor can any lack of this class of fuel ever occur here.

MINING IN MONTEZUMA, PAST AND PROSPECTIVE.

Mining in the Montezuma District is not a new thing, the business having passed beyond its experimental stage long ago. Concerning the richness and abundance of the ores here there has never been any question. That they must have been of high grade is evinced by the large quantities of \$50 and \$60 ore left on the waste dumps at the mines. Mining was commenced in these mountains as early as 1863-4, about which time the district was organized.

The business has, however, since been, through a variety of untoward causes, seriously retarded.

For several years, at first, there was no mill in or near the district for reducing the ores, which, during that period, had to be hauled to Austin for sale or reduction at an expense of more than \$100 per ton for transportation alone. When, afterwards, a mill was erected here, there still remained an excessive freight tariff on everything used or consumed in the district.

The completion of the Carson and Colorado Railroad to Candelaria early in the coming spring will effectually relieve business here from present oppressive rates of transportation. This railroad, which will be 175 miles long, traverses an absolute desert, over which freighting now costs \$80 per ton. Although this road will, for the present, terminate at Candelaria, 45 miles distant from Montezuma, it will shortly be extended further south, bringing it within 15 or 16 miles of the Company's mill.

Through its aid carriage of freights from San Francisco to this section of the country will be reduced from \$120 (present rate) to about \$45 per ton.

The plan here adopted, of aggregating a large number of mines under a single ownership, and securing, at the same time, all the means within easy reach for utilizing them cheaply, is much to be commended. To a neglect of these precautions are to be attributed many of the failures that have heretofore occurred in the business of mining for the precious metals on

this coast. With so many mines opened, and each capable of making even a small production, the Company can never run short of ores, — a trouble that is so certainly working disaster to this class of enterprises; and in this connection it may be observed that the value of the Company's property lies hardly more in what they at present possess than in what these possessions will at all times enable them to readily command. Owning the heart of the woodlands, and all the available water in the district, they can easily acquire hereafter any additional mines that the condition of their affairs may render necessary or desirable.

Owing to the topography of the country, the mines of this Company can be exploited to very considerable depths at a moderate cost. The most of the lodes here are cut at nearly right angles by deep ravines, which afford excellent facilities for opening them up and extracting the ores by means of tunnels run in upon them. Through the adoption of this plan, hoisting works will not, as a general thing, be required here for many years to come.

Though open to a depth of several hundred feet the underground workings have, as yet, made no water, nor is it probable that serious trouble will be experienced from this source until great depths have been attained.

EXPLANATORY.

If some discrepancies appear between results of my assays and those taken from the books of the Company, they are explained by the fact that my samplings of ore came from greater depths than theirs, and therefore carried a higher percentage of both silver and lead,—the ores in these mines uniformly improving with depth.

For results of ore reduced I have depended on the statements of parties having charge of the Company's mill, verifying the same by the books and vouchers of the Company. I hardly think any grave errors will be found in connection with this class of facts.

TITLE.

The Company's possessions, mines, woodlands, mill and town site, salt marsh, everything included, have been taken up, and are held under the several laws, State and Congressional, regulating matters of this kind, and with the requirements of which such full and exact compliance has been had that the tenure by which this Company holds these various properties may be considered equivalent to a United States patent, application for which would not be likely to meet with opposition from any quarter.

IN CONCLUSION

it may be stated that this property appears to possess all the elements essential to a prosperous business enterprise and a financial success.

To insure for these mines a long life and eminently satisfactory results, hardly anything more is required than a moderate expenditure for the erection of smelting works, and the resumption of ore extraction, with a fairly good business management in the field, an end that, in my judgment, can be best secured by the retention of the present experienced, intelligent, and trustworthy superintendent of the property.

HENRY DE GROOT,

MINING ENGINEER.

SAN FRANCISCO, Cal.,

August 21, 1880.

RESULT OF ASSAYS,

*made by Dr. Henry DeGroot, from average specimens of ore
personally selected from the mines cited.*

NAME OF MINE.	Ounces Silver per ton of Ore.	Ounces Gold per ton of Ore.	Value in Gold and Silver per ton of Ore.	Per cent. of Lead per ton of Ore.
The Arizona . . .	224.81	Trace.	\$290.67	45.40
The Bullion . . .	119.09	Trace.	153.98	47.10
The Abernathy . . .	102.08	.12	134.48	
The Nevada . . .	59.90	.06	73.52	29.20
The Great Eastern . . .	35.24	Trace.	45.56	39.20

In computing the *value* of the ores per ton, it will be noticed that Dr. De Groot has not, in the above assays, included the large percentage of lead.

Supposing the lead to be worth \$40 per ton, or two cents per pound, which is an exceedingly low estimate, the *total* value of the ores per ton, including lead, silver, and gold, would be as follows: —

NAME OF MINE.	Value per ton.	NAME OF MINE.	Value per ton.
The Arizona . . .	\$308.83	The Nevada . . .	\$85.20
The Bullion . . .	172.82	The Great Eastern . . .	61.24
The Abernathy . . .	134.48		

The following communication in regard to the Arizona — one of the group of twenty-nine mines which the company own — was received from Mr. C. C. Lane, a gentleman well known for his large experience in mining affairs, too late to be published in the prospectus, and the management take pleasure in appending it to the same, confident that no explanation is necessary upon an article which speaks so plainly for itself: —

BOSTON, MASS., Nov. 10, 1880.

In 1868 I examined the Buckeye and Champion Mines in Eureka, Nevada, with a view of purchase at \$12,000 cash. These mines were incorporated under the name of The Eureka Consolidated Silver Mining Company, which has paid dividends to date to the amount of \$4,415,000. The Arizona, which I personally examined, Oct. 19, 1880, is now a more promising mine than they were then at the same depth.

[Signed,]

C. C. LANE.

RESULT OF ASSAYS,

*made by Dr. Henry DeGroot, from average specimens of ore
personally selected from the mines cited.*

NAME OF MINE.	Ounces Silver per ton of Ore.	Ounces Gold per ton of Ore.	Value in Gold and Silver per ton of Ore.	Per cent. of Lead per ton of Ore.
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